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News Releases-

Release No. 0713.93

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JEFFERSON LETTERS FOUND IN NAL COLLECTION

BELTSVILLE, Md., Aug. 23--Letters signed by Thomas Jefferson addressing various agricultural matters, have been found among old files in the collection of the National Agricultural Library (NAL).

The Library of Congress has confirmed the letters are authentic. Several correspondences addressed to Jefferson have also been discovered.

According to NAL Director Joseph Howard, the eleven letters date from April 24, 1786 to October 20, 1819 and include requests to Jefferson for appointments to federal agricultural offices, letters from Jefferson transferring "millet seed" and "succory seed" to various acquaintances in the United States and Canada, and a letter to Jefferson from "Lord Sheffield" of the Board of Agriculture in London, England, commenting on Jefferson's invention of a "mould board" for use in farming.

"This is a very exciting find for the National Agricultural Library," Howard said. "To have the original correspondence of one of our founding fathers, in which he discusses one of his favorite subjects, agriculture, is a great honor for us."

Howard said the letters were contained in a file of the papers of economic historian Everett Edwards. A library patron was doing research on Edwards when she happened upon the letters and notified NAL staff. The Edwards file was contained in several boxes of materials dating from the 1940's that had been transferred to NAL from USDA's Economic Research Service.

A Thomas Jefferson scholar at the Library of Congress compared the letters discovered at NAL with Jefferson letters in the Library's collection for their authenticity.



Release No. 0714.93

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ETHANOL BYPRODUCT HOLDS PROMISE AS SWEETENER

WASHINGTON, Aug. 24--An imported sweetener called xylitol, now used in chewing gums, may someday be made competitively from American-grown corn fiber and could find a niche in sugar-free foods, says a U.S. Department of Agriculture scientist.

Xylitol imparts a cool mint-like sensation to the mouth and does not cause tooth decay, said USDA geneticist Timothy D. Leathers. It is now made primarily in Finland from acid-treated fibers of birch wood.

Leathers and colleagues have been studying xylitol production at the National Center for Agricultural Utilization Research operated by USDA's Agricultural Research Service in Peoria, Ill.

"Xylitol from corn fiber is a potential value-added co-product from the ethanol industry," said Leathers. The industry now sells corn fiber and fermentation byproducts together as cattle feed for 5 to 6 cents per pound.

In tests at the Peoria lab, enzymes from a certain yeast strain released up to 20 percent of the xylose in corn fiber by breaking down a natural corn fiber polymer composed of xylose, Leathers said. He reported the findings today in Chicago at the 206th annual meeting of the American Chemical Society.

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NOTE TO EDITORS: For details contact Timothy D. Leathers, Biopolymer Research Unit, National Center for Agricultural Utilization Research, Agricultural Research Service, USDA, Peoria, Ill. 61604. Telephone: (309) 685-4011.

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Release No. 0715.93

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WHEAT NOW EASIER TO BIOENGINEER, SCIENTISTS REPORT

WASHINGTON, Aug. 24--Wheat plants of tomorrow may yield better flour or more easily fend off attack by insects and disease, now that U.S. Department of Agriculture scientists have come up with a faster way to shuttle new genes into this crop.

"Until now, biotechnologists had no quick, easy way to move new genes with valuable traits into wheat," said J. Troy Weeks of USDA's Agricultural Research Service. "That's because genetic engineering techniques that work well with crops like tomato don't work with grains like wheat."

"Our lab technique," said Weeks, "is the simplest and speediest way yet reported to get wheat to accept new genes that would make plants hardier or kernels yield better flour. And, our approach requires only basic skills that most bioengineering technicians can easily master."

Weeks and colleagues Olin D. Anderson and Ann E. Blechl at the ARS Western Regional Research Center, Albany, Calif., used a combination of techniques to produce genetically engineered wheat plants in as little as seven months. "That's at least twice as fast as bioengineered wheat can be produced with the only other published method," said Weeks.

The team's approach relied on extracting tiny wheat embryos from developing kernels, then bombarding them with lab-built genes coated onto pellets propelled from a gene gun. Next, the researchers nurtured the bombarded embryos into 60 fertile, bioengineered plants in their laboratory and greenhouse.

"Neither the gene gun nor the idea of bombarding embryos are new," Weeks noted. "But we are the first team to successfully bombard very young embryos at an unusually early stage, that is, only five days after we excised them from kernels."

This step and others, he said, make a "lab-friendly" approach that other scientists worldwide can use to introduce genes of their choice into wheat.

The team of Weeks, Anderson, and Blechl chose a wheat called Bobwhite for the research. "Although it's not a major commercial variety in the United States," said Blechl, "it readily forms plants from cells grown in the laboratory. We're now using our methods to transfer genes into wheat types widely used by American farmers."

The researchers described their work in the cover article of the August issue of *Plant Physiology*, a scientific journal.

The test genes that the scientists inserted enable genetically engineered plantlets to survive exposure to an herbicide in the lab. Counterpart plantlets that do not take up the new genes weaken and die.

"Now we want to insert genes that should improve breadmaking quality," said Anderson. The flour-quality genes they will use were isolated earlier by Anderson and Frank C. Greene, who is with ARS at Athens, Ga.

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NOTE TO EDITORS: for details contact Olin D. Anderson, Crop Improvement and Utilization Research Unit, Western Regional Research Center, Agricultural Research Service, USDA, Albany, Calif. 94710; telephone: (510) 559-5773.

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Release No. 0718.93

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U.S. DONATES AGRICULTURAL COMMODITIES TO MEXICO

WASHINGTON, Aug. 25--The U.S. Department of Agriculture (USDA) has signed an agreement with World SHARE, a private voluntary organization, to provide about 1,000 metric tons of butteroil, valued at approximately \$1.7 million, for use in Mexico, according to Christopher Goldthwait, acting general sales manager of USDA's Foreign Agricultural Service.

The commodity will be sold to the Mexican private sector and the proceeds used to provide food assistance to the needy, improve health and nutrition programs, and support program activities. This program is expected to reach as many as 100,000 people across Mexico.

The donation was made under Section 416(b) of the Agricultural Act of 1949, which authorizes the donation of surplus commodities owned by USDA's Commodity Credit Corporation to needy people overseas.

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Release No. 0719.93

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NO-TILL WORKS JUST THE WAY IT'S SUPPOSED TO

WASHINGTON, Aug. 25--Herbicides nearly always stay in the topsoil of low-till farm fields, where they are needed to kill weeds, a U.S. Department of Agriculture scientist reported today.

On these same fields, only "very good quality" rainwater moves down rapidly below plant roots "through cracks, root and worm holes" for much of the year, said William M. Edwards, a soil scientist for USDA's Agricultural Research Service. He said "very good quality" means that he finds almost no traces of herbicides in the water.

Edwards said the two findings are based on 30 years of research on corn and soybean fields that had little or no tillage but where herbicides were used for weed control. Today, he said, farmers are increasingly following this practice to keep as much leftover crop residue on the surface as possible to control erosion. That approach, rather than plowing stalks and stems under, is being done on 57 percent of the nation's total cropland, according to 1992 figures of the Conservation Technology Information Center in West Lafayette, Ind.

"On sloping land such as the fields we studied, the possibility of herbicides reaching groundwater is small," Edwards reported today at the American Chemical Society's national meeting in Chicago. He said research on several watersheds at the 1,000-acre ARS North Appalachian Experimental Watershed Laboratory in Coshocton, Ohio, shows that the increased residue helps keep herbicides near the surface because in the top two inches of soil the herbicides bind to the organic matter from residue

decomposition. It is only when an inch or more of rain falls soon after the chemicals are applied, that they move downwards, he said.

"That's also when crop residue management does what it's designed to do: Keep soil from flowing away in stormwater," Edwards said.

That's based on instruments placed on the edge of sloping fields to record the amount of sediment, chemicals and water leaving. "Eliminating conventional plowing has changed the flow of soil from tons to pounds per acre," said Edwards.

Edwards has been involved in the past 28 years of the 30-year study at one of the first U.S. watershed research stations established. He said the site represents land conditions prevalent in many parts of the humid East.

His findings have been matched recently by 21 years of data at a similarly historic ARS lab at Watkinsville, Ga. Soil scientist George W. Langdale, at the Southern Piedmont Conservation Research Center in Watkinsville, began planting soybeans and grain sorghum into the residue of wheat and other winter crops in 1974. He said the fields have "almost completely resisted erosion. Even 6 inches of rain failed to move more than 9 pounds of soil per acre off the fields."

According to Edwards, such heavy downpours can flush herbicides down worm holes and other soil passages that are more numerous in lightly tilled and no-till soil. But this generally happens only a few times a year, he added. The rest of the year the water running down these paths can be the cleanest in the soil, he said.

"Worms have been unfairly blamed for water quality problems," said Edwards. "Worms actually should be credited for being the perfect plow: They enter the soil through holes no larger than the diameter of a pencil, and they make an extensive network of pathways for plant roots and water."

Where soil is not turned over by the broad-bladed moldboard plow, the pathways persist for years, he said, helping to drain fresh stormwater before it is contaminated or runs across a field.

His particular concern was whether nightcrawler burrows posed a problem because they are vertical tubes that go down about three feet. "With crop residue management we had stopped the overland transport of big amounts of herbicides and other farm chemicals," Edwards said. Fifteen years ago, we asked ourselves, "Were these burrows shifting the problem to groundwater by acting as a shortcut for herbicides and other chemicals? Our studies have now shown the answer is 'no'".

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NOTE TO EDITORS: For details, contact William M. Edwards, soil scientist, North Appalachian Experimental Watershed Laboratory, Agricultural Research Service, Coshocton, OH 43812. Telephone:(614) 545-6349.

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Release No. 0721.93
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FOAM FROM CORN PRODUCTS HAS POTENTIAL FOR HORTICULTURAL USE

WASHINGTON, Aug. 26--A water-absorbing foam developed by U.S. Department of Agriculture scientists uses corn starch or flour and plastic to provide a "first home" for sprouting fruit, flower and vegetable seeds that are planted directly into the foam.

In tests at National Center for Agricultural Utilization Research at Peoria, Ill., scientists produced semi-flexible polyurethane foams containing 50 percent granular unmodified cornstarch and corn flour, and other foams containing up to 16 percent gelled cornstarch or corn flour.

Up to half of the content of the foam can be corn carbohydrates, creating a new market for corn growers, said R. Leo Cunningham, a chemist with USDA's Agricultural Research Service, which operates the Peoria facility.

"Tests indicate the foams made with a gelled corn flour absorb water faster and drain better than foams not containing corn flour, although water retention was not as good," Cunningham said. He presented the Peoria scientists' findings today in Chicago at the 206th annual meeting of the American Chemical Society.

Cunningham said cornstarch and corn flour also might be used in sponges, napkins and similar products. The ARS researchers are seeking a patent on the water-holding corn-based foam.

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NOTE TO EDITORS: Contact for information Leo Cunningham, National Center for Agricultural Utilization Research, Agricultural Research Service, USDA, Peoria, Ill. 61604. Phone: (309) 681-6405.

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Program Announcements-

Releases No. 0716.93

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USDA ANNOUNCES PREVAILING WORLD MARKET RICE PRICES, MARKETING CERTIFICATE RATES

WASHINGTON, Aug. 24--Acting Under Secretary of Agriculture Richard Schroeter today announced the prevailing world market prices of milled rice, loan rate basis, as follows:

--long grain whole kernels:	6.58 cents per pound
--medium grain whole kernels:	5.98 cents per pound
--short grain whole kernels:	5.90 cents per pound
--broken kernels:	3.29 cents per pound

Based upon these milled rice world market prices, loan deficiency payment (LDP) rates, gains from repaying price support loans at the world market price, and marketing certificate rates are:

	Loan Gain and LDP Rate	Marketing Certificate Rate
\$/Cwt.....	
--for long grain:	\$2.03	\$0.56
--for medium grain:	\$1.84	\$0.52
--for short grain:	\$1.84	\$0.47

These announced prices and rates are effective today at 3 p.m. EDT. The next scheduled price announcement will be made Aug. 31 at 3 p.m. EDT.

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Release No. 0722.93
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USDA ANNOUNCES PREVAILING WORLD MARKET PRICE AND USER MARKETING CERTIFICATE PAYMENT RATE FOR UPLAND COTTON

Washington, Aug. 26--Bruce R. Weber, acting executive vice president of USDA's Commodity Credit Corporation, today announced the prevailing world market price, adjusted to U.S. quality and location (adjusted world price or AWP), for Strict Low Middling (SLM) 1-1/16 inch (leaf grade 4, micronaire 3.5-3.6 and 4.3-4.9, strength 24-25 grams per tex) upland cotton (base quality) and the coarse count adjustment (CCA) in effect from 5:00 p.m. today through 3:59 p.m. Sept. 2. The user marketing certificate payment rate announced today is in effect from 12:01 a.m. Friday, Aug. 27 through midnight Thursday, Sept. 2.

The Agricultural Act of 1949, as amended, provides that the AWP may be further adjusted if: (a) the AWP is less than 115 percent of the current crop year loan rate for base quality upland cotton, and (b) the Friday through Thursday average price quotation for the lowest-priced U.S. growth as quoted for Middling (M) 1-3/32 inch cotton, C.I.F. northern Europe (USNE price) exceeds the NE price. The maximum allowable adjustment is the difference between the USNE price and the NE price.

A further adjustment to this week's calculated AWP may be made in accordance with this provision. The calculated AWP is 79 percent of the 1993 upland cotton base quality loan rate, and the USNE price exceeds the NE price by 1.26 cents per pound. Following are the relevant calculations:

I.	Calculated AWP	41.56 cents per pound
	1993 Base Loan Rate	52.35 cents per pound
	AWP as a Percent of Loan Rate	79
II.	USNE Price	56.45 cents per pound
	NE Price	<u>-55.19</u> cents per pound
	Maximum Adjustment Allowed	1.26 cents per pound

Based on a consideration of the U.S. share of world exports, the current level of cotton export sales and cotton export shipments, and other relevant data, no further adjustment to this week's calculated AWP will be made.

This week's AWP and coarse count adjustment are determined as follows:

Adjusted World Price

NE Price	55.19
Adjustments:	
Average U.S. spot market location	11.82
SLM 1-1/16 inch cotton	1.50
Average U.S. location	0.31
Sum of Adjustments	<u>- 13.63</u>
Calculated AWP	41.56
Further AWP adjustment	<u>0</u>
ADJUSTED WORLD PRICE	41.56 cents/lb.

Coarse Count Adjustment

NE Price	55.19
NE Coarse Count Price	<u>- 50.83</u>
	4.36
Adjustment to SLM 1-1/32 inch cotton	<u>- 3.20</u>
COARSE COUNT ADJUSTMENT	1.16 cents/lb.

Because the AWP is below the 1991, 1992, and 1993 base quality loan rates of 50.77, 52.35, and 52.35 cents per pound, respectively, the loan repayment rate during this period is equal to the AWP, adjusted for the specific quality and location plus applicable interest and storage charges. The AWP will continue to be used to determine the value of upland cotton that is obtained in exchange for commodity certificates.

Because the AWP is below the 1993-crop loan rate, cash loan deficiency payments (LDPs) will be paid to eligible producers who agree to forgo obtaining a price support loan with respect to the 1993 crop. The payment rate is equal to the difference between the loan rate and the AWP. Producers are allowed to obtain an LDP on a bale-by-bale basis.

The USNE price has not exceeded the NE current price by more than 1.25 cents per pound for four consecutive weeks and the AWP has not exceeded 130 percent of the 1993 crop year base quality loan rate in any week of the 4-week period. As a result, the user marketing certificate payment rate is 0 cents per pound. This rate is applicable during the Friday through Thursday period for bales opened by domestic users and for cotton contracts entered into by exporters for delivery prior to Sept. 30, 1994. Relevant data are summarized below:

Week	For Friday through Thursday Period Ending	USNE Price	NE Price	USNE Minus NE	User Marketing Certificate Payment Rate
		cents per pound	
1	Aug. 5, 1993	59.75	56.45	3.30	2.05
2	Aug. 12, 1993	57.60	55.50	2.10	0.85
3	Aug. 19, 1993	56.05	54.85	1.20	0
4	Aug. 26, 1993	56.45	55.19	1.26	0

Next week's AWP, CCA and user marketing certificate payment rates will be announced on Thursday, Sept. 2.



